IN THE CLAIMS

This listing of the claim will replace all prior versions and listings of claim in the present application.

Listing of Claims

Claim 1 (canceled).

2. (currently amended)A packet communication apparatus for transmitting a packet from a first network to a second network, wherein the packet includes ~~an~~ a destination Internet Protocol (IP) address, and a first ~~header~~ Virtual Private Network (VPN) identifier used to compose a ~~closed network~~first VPN in the first network, said packet communication apparatus comprising:

a packet generating unit which generates a second ~~header~~ VPN identifier used to compose a ~~closed network~~second VPN in the second network based on the destination IP address and ~~information in the first header~~the first VPN identifier; and

a transmitter which transmits a packet having added thereto said second ~~header~~VPN identifier,

wherein the first and second networks are networks that implement the IP.

3. (currently amended) A packet communication apparatus according to claim 2, further comprising:

a processing unit which replaces the first ~~header~~ VPN identifier with the second ~~header~~VPN identifier.

4. (currently amended) A packet communication apparatus according to claim 2, further comprising:

a route decision processing unit which decides a route to the second network according to the destination IP address and ~~information in the first header~~the first VPN identifier.

5. (previously presented) A packet communication apparatus according to claim 2, wherein the packet is an IP packet.

6. (currently amended)A packet communication method of transmitting a packet from a first network to a second network, wherein the packet includes ~~an~~ a destination Internet Protocol (IP) address and a first ~~header~~ Virtual Private Network (VPN) identifier used to compose a ~~closed network~~first VPN in the first network, the packet communication method comprising the steps of:

receiving the packet; and

generating a second ~~header~~ VPN identifier used to compose a ~~closed network~~second VPN in the second network based on the destination IP address and ~~information in the first header~~the first VPN identifier,

wherein the first and second networks are networks that implement the IP.

7. (currently amended) A packet communication method according to claim 6, further comprising the step of:

replacing the first ~~header~~ VPN identifier with the second ~~header~~VPN

identifier.

8. (currently amended) A packet communication method according to claim 6, further comprising the step of:

deciding a route to the second network according to the destination IP address and ~~information in the first header~~the first VPN identifier.

9. (previously presented) A packet communication apparatus according to claim 4, wherein the packet is an IP packet.

10. (currently amended)A packet communication system comprising:

a first network;

a second network; and

a router which transmits a packet from the first network to the second network,

wherein the packet includes ~~an~~ a destination Internet Protocol (IP) address and a first ~~header~~ Virtual Private Network (VPN) identifier used to compose a ~~closed network~~first VPN in the first network, and

wherein the router generates a second ~~header~~ VPN identifier used to compose a ~~closed network~~second VPN in the second network based on the destination IP address and ~~information in the first header~~the first VPN identifier,

wherein the first and second networks are networks that implement the IP.

11. (currently amended) A packet communication system according to claim 10, wherein the router replaces the first ~~header~~ VPN identifier with the second ~~header~~VPN identifier.

12. (currently amended) A packet communication system according to claim 10, wherein the router decides a route to the second network according to the destination IP address and ~~information in the first header~~the first VPN identifier.

13. (currently amended)A packet communication apparatus for transmitting a packet from a first network to a second network, wherein the packet includes ~~an~~ a destination Internet Protocol (IP) address and a first ~~header~~ Virtual Private Network (VPN) identifier used to compose a ~~closed network~~first VPN in the first network, said packet communication apparatus comprising:

an index generating unit which generates an index based on the destination IP address and ~~information in the first header~~the first VPN identifier;

a packet generating unit which generates a second ~~header~~ VPN identifier used to compose a ~~closed network~~second VPN in the second network based on the index; and

a transmitter which transmits a packet having added thereto said second ~~header~~VPN identifier,

wherein the first and second networks are networks that implement the IP.

14. (currently amended) A packet communication apparatus according to claim 13, further comprising:

a processing unit which replaces the index with the second ~~header~~VPN identifier.

15. (currently amended) A packet communication apparatus according to claim 13, further comprising:

a route decision processing unit which decides a route to the second network according to the destination IP address and ~~information in the first header~~the first VPN identifier.

16. (previously presented)A packet communication apparatus according to claim 13, wherein the packet is an IP packet.

17. (currently amended)A packet communication method of transmitting a packet from a first network to a second network, wherein the packet includes ~~an~~ a destination Internet Protocol (IP) address and a first ~~header~~ Virtual Private Network (VPN) identifier used to compose a ~~closed network~~first VPN in the first network, the packet communication method comprising the steps of:

receiving the packet;

generating an index based on the destination IP address and ~~information in the first header~~the first VPN identifier; and

generating a second ~~header~~ VPN identifier used to compose a ~~closed network~~second VPN in the second network based on the index,

wherein the first and second networks are networks that implement the IP.

18. (currently amended) A packet communication method according to claim 17, further comprising the step of:

replacing the index with the second ~~header~~VPN identifier.

19. (currently amended) A packet communication method according to claim 17, further comprising the step of:

deciding a route to the second network according to the destination IP address and ~~information in the first header~~the first VPN identifier.

Claim 20 (canceled).

21. (currently amended)A packet communication system comprising:

a first network;

a second network; and

a router which transmits a packet from the first network to the second network,

wherein the packet includes ~~an~~ a destination Internet Protocol (IP) address and a first ~~header~~ Virtual Private Network (VPN) identifier used to compose a ~~closed network~~first VPN in the first network, and

wherein the router generates an index based on the destination IP address and ~~information in the first header~~the first VPN identifier, and generates a second ~~header~~ VPN identifier used to compose a ~~closed network~~second VPN in the second network based on the index,

wherein the first and second networks are networks that implement the IP.

22. (currently amended) A packet communication system according to claim 21, wherein the router replaces the index with the second ~~header~~VPN identifier.

23. (currently amended)A packet communication system according to claim 21, wherein the router decides a route to the second network according to the destination IP address and ~~information in the first header~~the first VPN identifier.